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RANGE EXTENSIONS AND NOTABLE RECORDS FOR BUTTERFLIES OF CAPE YORK PENINSULA, AUSTRALIA

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Abstract

Recent literature is summarized on butterflies of Cape York Peninsula and new distribution data and other notes are presented for 50 species occurring in the area. In addition 98 species are listed for a previously uncollected region near Shelburne Bay on the east coast. *Zetona delospila* Waterhouse is newly recorded for Queensland and new localities are given for it in Western Australia and Northern Territory.

Introduction

For the purposes of this paper Cape York Peninsula is taken as that part of north Queensland north of 16°S, i.e. from about Cooktown northwards. This region has come under increasing scientific scrutiny in recent years and much modern literature is cited by Kikkawa (1976, 1977).

The butterfly fauna of the Peninsula, a diverse, tropical region approaching that of the state of Victoria in size, is rather poorly known and most published records refer to three localities which have been accessible to collectors over the years, viz. Cooktown, Cape York and Iron Range (= Claudie River). These three localities feature prominently in Waterhouse and Lyell's "The Butterflies of Australia" of 1914, still the only systematic listing of localities for all Peninsula species. The Endeavour River (site of Cooktown) had been the scene of some of the earliest collections of Australian butterflies when the naturalists of Cook's 1770 voyage took many species later described by Fabricius; a hundred years later the gold rush established the town of Cooktown there and it has remained an accessible centre popular with collectors ever since. The vicinity of Cape York itself was a popular stopping place for early exploratory vessels and these, especially the "Rattlesnake" in 1848 and 1849, made some butterfly collections there; later with the establishment of the settlement of Somerset in 1863 visitors became more frequent and today the town of Bamaga maintains the accessibility of the region (Anonymous, 1974). The most prominent early collector at Cape York was the German, H. Elgner, who sent much material to G. A. Waterhouse during the first decade of this century; some of his records, particularly of *Euploea* spp., have never been repeated and need validation. The Iron Range records of Waterhouse and Lyell (1914) are all attributable to J. A. Kershaw of the National Museum of Victoria who made striking discoveries in this rich area during a 3 month stay in the summer of 1913-1914 (Kershaw, 1914-1915).

Quite fortuitously these three localities of Cooktown, Cape York and Iron Range coincide with the three major rainforest systems of the Peninsula and hence Waterhouse and Lyell's 1914 book gives a surprisingly accurate picture of butterfly distribution in the Peninsula despite its limited geographic coverage. Peters' (1971) checklist of butterfly types in the Australian Museum gives additional label data for many Peninsula species described by Waterhouse & Lyell.

After 1914 there was little reported collecting in the Peninsula until quite modern times. Exceptions included a joint visit to Cape York by E. J. Dumigan and W. B. Barnard for six weeks in 1927 followed by a 3 months return visit by Barnard in 1928 (Dumigan, 1933), and some collecting in the goldfields around Coen by W. D. Dodd and others. These collections resulted in descriptions of *Hypochrysops elgneri barnardi* by Waterhouse (1934) from Cape York, and the Jezebel now known as *Delias ennia tindalii* Joicey & Talbot by Tindale (1923) from Coen.

Then in 1961 and 1966, J. F. R. Kerr and J. Macqueen visited Iron Range and "rediscovered" the rich Claudie River district first collected by Kershaw in 1913. Their exciting discoveries (Kerr, 1966; Kerr, 1967) of four new Australian records, *Toxidia inornata inornata* (Butler), *Hypochrysops hippuris* Hewitson, *Philiris ziska* (Grose-Smith) and *Philiris diana papuana* (Wind & Clench) and one undescribed subspecies, *Candalides consimilis toza* Kerr, encouraged an influx of other collectors to the Peninsula, many of whom published notes. Le Souëf (1971a) and Monteith (1971) both record species from Iron Range and Coen; Le Souëf (1971b) notes *Virachola democles* (Miskin) from Cooktown and *Trapezites macqueeni* Kerr & Sands from Musgrave. When Monteith (1972) gave a comprehensive list of 144 species then known from Iron Range he cited 12 collectors who had worked there since 1961. McCubbin (1972a) gave a list of species from Weipa and also (1972b) discussed the origin of the peninsula fauna; his book (McCubbin, 1971) mentions and illustrates some Weipa species. D'Abrera (1971) described *Philiris ziska titeus* based on some of Kerr's 1961 Iron Range specimens in the British Museum. Manskie and Manskie (1972) listed some Cooktown species.

In 1972 "Butterflies of Australia" by Common and Waterhouse appeared in which Common's excellent treatment of the fauna included individual maps showing the gross pattern of each species' known range in the Peninsula; new information not mapped is given in an appendix. Discoveries in the Peninsula have continued since 1972: *Mimene atropatene* Fruhst., *Rachelia extrusa* (C. & R. Felder) and *Lexias aeropa* (L.) have been newly recorded from Australia respectively by Miller (1975), Atkins (1975) and Monteith & Kerr (1977), while *Hypolimnias antilope* (Cramer) was taken in Queensland for the first time at Lockerbie (Gibb, 1977) and there is a sight record for *Apaturina erminea* Cramer by Daniels (1975). McEvey (1977) lists 61 species taken at Iron Range in January 1974 including the first Australian mainland record of *Petrelaea dana* (de Niceville). A new subspecies of Birdwing, *Ornithoptera priamus macalpinei*, was recognized by Moulds (1974) and largely unsubstantiated comments on Peninsula Birdwings were given by D'Abrera (1975). A cumulative listing of 141 species known from the Cape York area is given in Anonymous (1974), while

Daniels (1975) lists species captured at Iron Range in 1974. Information on biology of species at Iron Range has been given by Kerr & Macqueen (1967) for *Jalmenus eichhorni* Staudinger, by Daniels (1976) for *Hypochrysops theon medocus* (Fruhst.), by Moulds (1976a) for *Narathura araxes eupolis* (Miskin), and by Moulds (1976b) for *Deudorix epijarbas dido* Waterhouse.

Since 1974 we have been undertaking the entomological component of a project entitled "The Ecological Biogeography of Cape York Peninsula", led by Dr J. Kikkawa and funded by the Australian Biological Survey. Butterflies were chosen as a group for special attention and to this end all available literature and museum locality records have been compiled and a programme of field collecting in the Peninsula carried out, concentrating on poorly collected areas. In addition we have sought the cooperation of the many private collectors who have visited the Peninsula in recent years; the enthusiasm, depth of knowledge and generosity of these individuals has made this aspect of the project a pleasurable and productive exercise, adding greatly to our body of information. All records have been mapped in detail and we present here significant extensions to known range and other notable records for 50 Peninsula species. An appendix is given of 98 species recorded from a previously uncollected region at Shelburne Bay, midway between Iron Range and Cape York. The following abbreviations have been used throughout: GBM, G. B. Monteith; SRM, S. R. Monteith; W & L, Waterhouse and Lyell; C & W, Common and Waterhouse; UQIC, University of Queensland Insect Collection; ANIC, Australian National Insect Collection; QM, Queensland Museum. Localities referred to in the text are shown on the map (Fig. 1).

Family HESPERIIDAE

1. *Hasora discolor mastusia* Fruhstorfer

1♂, Iron Range, 21.v.1973, C. G. Miller (In Miller Coll.); 2♂♂, Mt Webb National Park, 50 km N. of Cooktown, 11-14.vii.1976, GBM & SRM (In UQIC); 1♂, Rocky River, Silver Plains, 2.x.1976, D. P. A. Sands (In Sands Coll.); 1♀, Cooktown, 3.vii.1964, J. C. Le Souëf (In Le Souëf Coll.).

North of Cairns on the mainland of the Peninsula this species has been recorded only from Cape York (W & L, 1914); the present records establish its presence at several localities in the intervening region.

2. *Netrocoryne repanda expansa* Waterhouse

3♂♂, Mt White summit, Coen, 27.x.1976, D. P. A. Sands (In Sands Coll.).

These specimens, which agree with the northern race of this species, constitute a 400 km extension of known range north from Mt Molloy, its previously known limit (C & W, 1972).

3. *Trapezites macqueeni* Kerr & Sands

2♂♂, sandstone outcrops 30 km W. of Fairview, 26.vi.1975, GBM; 4♂♂, same locality, 22-24.vi.1976, GBM & SRM; 1♂, sandstone hilltop 12 km N. of Hopevale, 15.vii.1976, GBM & SRM (In UQIC); 1♂, 31 km NW by W of Cooktown, 250 m, 20.v.1977, I. F. B. Common & E. D. Edwards; 3♂♂, 11 km SE by S of Laura, 24.v.1977, I. F. B. Common & E. D. Edwards (In ANIC); 12♂♂, sandstone outcrops 30 km W. of Fairview, 23-25.vii.1977, C. G. Miller (In Miller Coll.).

These records of hill-topping males confirm that this recently described species is established well north of the Atherton Tableland from which it was

noted by the describers and authenticate the female from Musgrave mentioned by Le Souëf (1971) and C & W (1972). Its apparent commonness on the sandstone ranges around Laura suggests that it may be a characteristic species of this land form, and that its very sporadic occurrences further south represent occasional extensions outside its main centre of distribution.

4. *Trapezites eliena* (Hewitson)

1♂, Lagoon 4.5 km upstream of Jardine River road crossing, 24.viii.1973, J. Winter; 1♀, sandstone outcrops 30 km W. of Fairview, 22-24.vi.1976, GBM & SRM; 1♂, sandstone hilltop, 12 km N. of Hopevale, 15.vii.1976, GBM & SRM (In UQIC); 9♂♂, 31 km NW by W of Cooktown, 250 m, 20-22.v.1977, I. F. B. Common & E. D. Edwards (In ANIC).

This species has previously been known as far north as Kuranda and it has generally been accepted as a tableland species in the northern part of its range (C & W, 1972). These specimens not only extend the range of the species 750 km to the north but also establish it as surviving in lowland areas. The Jardine River locality is virtually at sea-level while the Fairview and Hopevale sites are at about 120 and 250 metres respectively. Genitalia of the males show no discernible differences from southern populations.

5. *Toxidia peron* (Latreille)

1♂, 9 km S. of Archer River Crossing, 28.vi.1975, GBM (In UQIC); 3♂♂, Mt White summit, Coen, 27.x.1976, D. P. A. Sands (In Sands Coll.).

These hill-topping males extend the known range of this species approximately 450 km north from its previously recognized northern limit at Kuranda. In the northern part of its range this species is normally mountain restricted (C & W, 1972) but the Archer River specimen was taken at around 200 m.

6. *Toxidia inornata inornata* (Butler)

1♀, Captain Billy Creek road crossing, 9-13.vii.1975, GBM; 3♂♂, 2♀♀, Dividing Range, 15 km W. of Captain Billy Creek, 5-12.ii.1976, GBM (In UQIC).

This is the first locality outside Iron Range for this rainforest species in Australia and extends its known range about 130 km further north. Attention is drawn to the distinct purplish sheen above and below in fresh specimens.

7. *Hesperilla ornata* (Leach)

1♀, bred ex larva on *Gahnia*, Mt Lamond, Iron Range, 10.vii.1975, M. S. Moulds (In Moulds Coll.); pupal fragments ex shelters on *Gahnia sieberana*, Leo Ck road, 500 m, McIlwraith Rg., 30 km NE. of Coen, 29.vi.-4.vii.1976, GBM, SRM & M. De Baar (In UQIC & De Baar Coll.).

This skipper has been taken in larval form by A. F. Atkins at Iron Range in April, 1971 (Monteith, 1972) and also in September, 1975 (Atkins *pers. comm.*) but the bred ♀ noted here is the first adult specimen for the Peninsula. The pupal fragments from McIlwraith Range were taken from typical *Hesperilla* feeding shelters on *Gahnia sieberana*, a known foodplant of *Hesperilla ornata*. Although pupal caps, which are normally diagnostic for species of *Hesperilla*, were not present the cremaster fragments were examined by Mr Atkins who confirms them as similar to *H. ornata* elsewhere in north Queensland. The Iron Range population has been attributed to the northern subspecies *H. o. monotherma* (Lower) on immature characters and circumstantial evidence but Mr Moulds (*pers. comm.*) reports that his adult ♀ is much more similar to the typical subspecies, *H. o. ornata* (Leach). Clearly precise subspecific assignment should await further adult material including males.

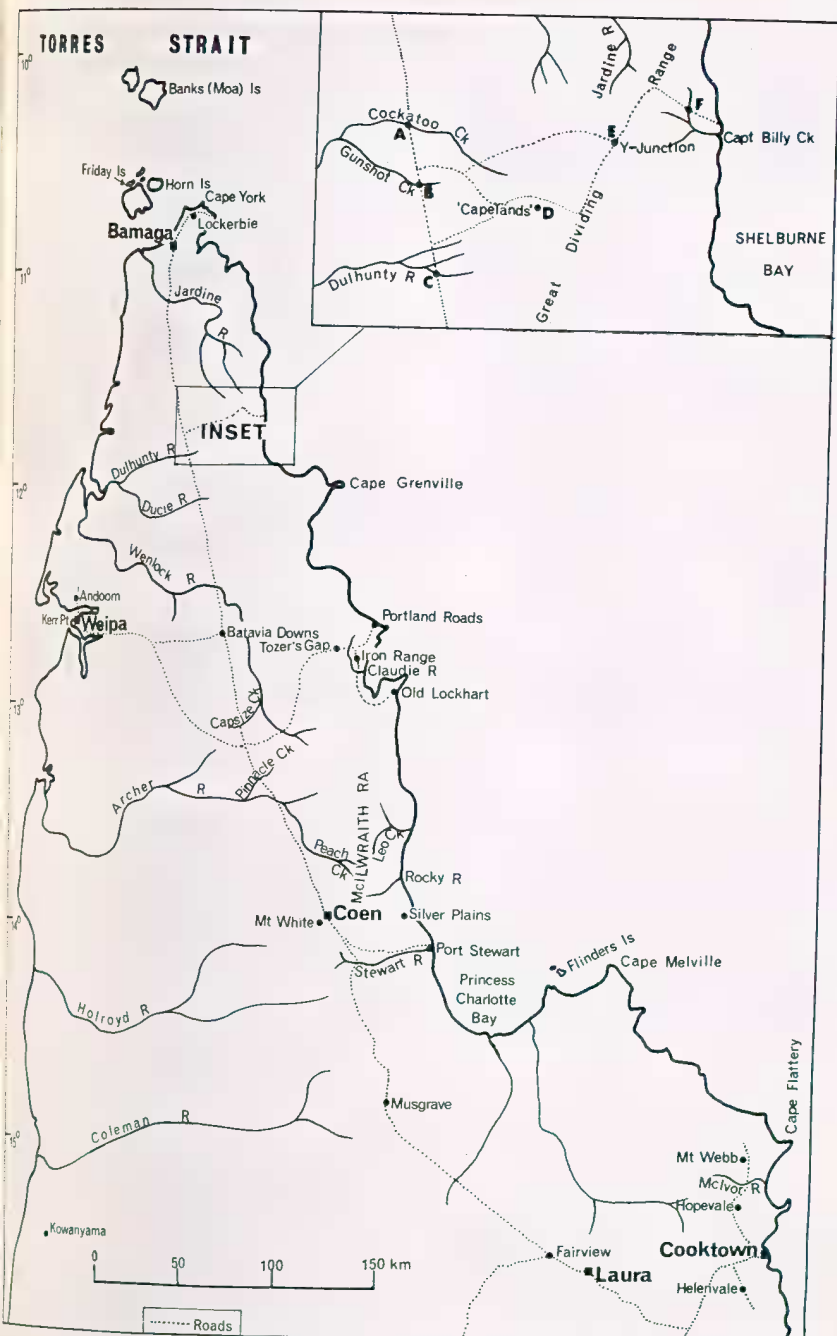


FIG. 1. Map of Cape York Peninsula showing localities mentioned in text. Inset shows enlargement of Shelburne Bay region.

8. *Ocybadistes walkeri sonia* Waterhouse

1♀, Telegraph Crossing of Dulhunty River, 2-4.vii.1975, GBM; 1♀, Andoom Bridge, Weipa, 6.ii.1976, GBM (In UQIC).

C & W (1972) give the Claudie River as the northern limit for this subspecies; these records extend its known range 120 km to the north as well as to the west coast at Weipa.

9. *Ocybadistes hypomeloma hypomeloma* Lower

1♀, sandstone outcrops 30 km W. of Fairview, 22-24.vi.1976, GBM & SRM (In UQIC).

This specimen is from about 230 km north of Kuranda which was cited by C & W (1972) as the northern extent of this subspecies. It agrees with the subspecies *hypomeloma* rather than *vaga* (Waterhouse) from N.T. and Prince of Wales Island in having the spot above M_1 of the hindwing present and separate from the postmedian band.

10. *Sabera fuliginosa fuliginosa* (Miskin)

2♂♂, 1♀, Isabella Falls, 30 km NW. of Cooktown, 28.vii.1964, J.C. Le Souëf (In Le Souëf Coll.).

C & W (1972) give this species' range as Paluma to Mossman and Daniels (1975) notes it a little further north at Daintree. These specimens extend its range another 120 km north.

11. *Mimene atropatene* Fruhstorfer

1♀, Mt. Lamond, Iron Range, 1.viii.1977, C. G. Miller (In Miller Coll.).

This species was known in Australia from one specimen taken at Iron Range in May 1973 (Miller, 1975) until this second specimen taken 4 years later by the same collector within 50 m of the original capture.

Family PAPILIONIDAE

12. *Protographium leosthenes leosthenes* (Doubleday)

Many specimens, Mt White, Coen, 8-13.i.1964, M. S. Moulds (In Moulds Coll.); sightings, same locality, 27.x.1976, D. P. A. Sands.

This endemic Australian species is mainly known as far north as Mt Garnet but two records are available from the tip of the Peninsula (C & W, 1972; W & L, 1914). The present captures and sightings on Mt White establish its presence in the central Peninsula. There is also a specimen in the Australian Museum from Banks Island, in the middle of Torres Strait, but it has yet to be taken on the New Guinea mainland.

13. *Graphium macleayanum* (Leach)

1♂, Leo Creek road, ca 500 m, McIlwraith Range, 30 km NE of Coen, 29.vi.-4.vii.1976, GBM & SRM (In UQIC).

The presence of this species on the McIlwraith Range, 475 km north of its previous northernmost record at Kuranda (C & W, 1972) is particularly noteworthy. The species is common in more temperate parts of Australia and its occurrence in the Cairns region is restricted to cool rainforests of the Atherton Tableland and other ranges above 400 m. The McIlwraith Range is the only appreciable area above this altitude north of Cooktown and it is unlikely that the species will be found elsewhere in the Peninsula. Surprisingly, it has only

recently been taken in the extensive mountain system between Mossman and Cooktown (Mt Misery, Dec., 1974, M. S. Moulds) but this may reflect lack of collecting at higher elevations. Although the population at McIlwraith Range is apparently well isolated, the specimen available shows no discernible differences from Atherton Tableland examples of *Graphium macleayanum wilsoni* Couchman; however the specimen was picked up dead and damaged so definite subspecific assignment should await further material.

14. *Graphium macfarlanei macfarlanei* (Butler)

1♀, Dividing Range, 15 km W. of Captain Billy Creek, 4-9.ii.1976, GBM; 1♀, 1♂, Kerr Point, Weipa, 3-5.ii.1976, GBM (In UQIC).

This uncommon species has been taken at Cape York (W & L, 1914) and Iron Range (Monteith, 1972) in the northern Peninsula and these present records close the gap between these two sites and extend its known range to the west coast at Weipa. At Weipa it was common in February in small patches of coastal rainforest.

15. *Ornithoptera priamus* (Linnaeus)

Subsp. *euphorion* (Gray): 1♂, Mt Webb Nat. Pk, 50 km N. of Cooktown, 11-14.vii.1976, GBM & SRM (In UQIC).

Subsp. *macalpinei* Moulds: 1♀, Stewart River 5 km W. of Port Stewart, 25-27.vi.1976, GBM & SRM (In UQIC).

Ornithoptera priamus exists on the mainland of the Peninsula as three named races, viz. *O. p. pronomus* (Gray) from the Bamaga-Somerset area north of the Jardine River, *O. p. macalpinei* Moulds from the Claudie River south to Silver Plains Homestead, and *O. p. euphorion* (Gray) from Cooktown south to Mackay (Moulds, 1974). The records above extend the known range of *macalpinei* 15 km further south to the Stewart River, and that of *euphorion* 50 km north to Mt Webb, narrowing the gap between them to about 200 km. Several visits to the rain forests at Capelands, midway between the Iron Range and Bamaga rain forests, have failed to locate birdwings there. If this apparent absence from suitable habitat midway between the known ranges of subspp. *pronomus* and *macalpinei* is real then it supports the recognition of *macalpinei* as a distinct subspecies, despite the doubts expressed by D'Abrera, 1976.

At the Stewart River females were seen flying around large-leaved *Aristolochia* vines later determined by the Queensland Herbarium as *A. tagala*. This is the first confirmed foodplant for subspp. *macalpinei*. A note on the identity of large north Queensland species of *Aristolochia* is necessary here. The Stewart River plants were identical to that figured by McCubbin (1971, p. 177) as the foodplant of *O. p. poseidon* at Banks Island, and named by him as *A. indica*; the same writer (p. 144) also lists *A. indica* as the foodplant of *O. p. euphorion* at Cairns; Moulds (1974), in referring to an unidentified foodplant of *O. p. macalpinei* at Iron Range, says it was "probably *A. indica*, a common foodplant of *O. p. euphorion* in the Cairns district"; C & W (1972) cite both *A. indica* and *A. tagala* as foodplants of *O. p. euphorion*. Advice from the Queensland Herbarium indicates that all *Aristolochia* in N. Qld and Torres Str. with large, soft leaves and sub-spherical, dehiscent fruit should be known as *A. tagala*, and

that true *A. indica* is probably an Asian species not occurring in Australia. Mr D. P. Sands (*pers. comm.*) states that in Papua New Guinea *A. tagala* is highly variable geographically in both leaf size and texture, and that N. Qld plants are well within the range of variability known there for *A. tagala*.

The other unidentified *Aristolochia* foodplant at Iron Range with indehiscent fruit referred to by Moulds (1974) is undoubtedly *A. deltantha*, this species having been recently identified from the area by the Qld Herbarium.

Family PIERIDAE

16. *Elodina padusa* (Hewitson)

1♂, hilltop, 5 km N. of Musgrave, 7.vii.1976, GBM & SRM (In UQIC); 1♂, 1♀, Mareeba, 24.iii.1975, M. De Baar (In De Baar Coll.); 4♂♂, Quarantine Bay, Coktown, 18-19.vii.1964, J. C. Le Souëf (In Le Souëf Coll.).

In Queensland this species has been known south and west of a line joining Rockhampton and the Gulf of Carpentaria (C & W, 1972). These specimens show it to extend considerably further northwards into the drier parts of the Peninsula.

17. *Appias ada caria* Waterhouse & Lyell

1♂, Capsize Creek, 64 km N. of Archer River crossing, 17.vii.1975, GBM; 1♂, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, GBM & SRM (In UQIC); 2♂♂, 4♀♀, same data, M. De Baar (In De Baar Coll.); 1♀, Old Lockhart River Mission, 26.x.1974, M. S. Moulds (In Moulds Coll.).

This species, often regarded as rare, has been taken regularly at Iron Range (Monteith, 1972; Daniels, 1975) but has been known elsewhere in the Peninsula proper only from the type locality at the Ducie River (W & L, 1914) which remains the northernmost record. These new records show it to be fairly widespread in the central Peninsula but still not recorded between the McIlwraith Range and Daintree.

18. *Delias nysa nivira* Waterhouse & Lyell

2♂♂, Tozer's Gap area, Iron Range, 25.ix.1975, C. G. Miller & A. F. Atkins (In Miller and Atkins Colls.).

This rare race of *Delias nysa* has been recorded in the past only from its type locality near Coen and these two males extend its known range 130 km north to Iron Range.

Family NYMPHALIDAE

19. *Danaus plexippus plexippus* (Linnaeus)

2 sightings, Lockerbie, Cape York, 13-27.iv.1973, GBM & SRM.

Although known from New Guinea this widespread introduced species seems extremely rare on the Peninsula, perhaps because of the scarcity of its milkweed foodplants. It is mentioned under the name of *Danaida archippus* by Kershaw (1915) in his account of a visit to the Claudie River, but this cannot be confirmed because W & L (1914), who studied Kershaw's material from the Claudie River, fail to mention the species from the Peninsula. The first authentic record for the Peninsula is at Iron Range by Daniels (1975) and the sightings reported above extend its known presence to the northern tip.

20. *Euploea tulliolus tulliolus* (Fabricius)

1 specimen, Iron Range, May 1973, C. G. Miller (collected but not retained): 1♂, 1♀, Cooktown, 4.v.1922; 1♂, Cooktown, 23.iv.1922 (In QM).

Although C & W (1972) map the distribution of this species as being continuous along the eastern seaboard between Cape York and northern N.S.W. and "common north of Gladstone" there have, in fact, been no specimens published for the 700 km interval between the localities of Cape York cited by W & L (1914) and Cape Tribulation, near Mossman, cited by Daniels (1975). The isolated records given here for Cooktown and Iron Range, the latter requiring confirmation, indicate that although present on the body of the Peninsula it is apparently a very rare butterfly there.

21. *Tellervo zoilus* (Fabricius)

Two races of this species have been recorded from north Queensland, viz. *T. z. gelo* Waterhouse & Lyell known from Torres Strait to Iron Range, and *T. z. zoilus* (Fab.) known from Cooktown to Paluma (C & W, 1972). Newly collected specimens from intervening localities are as follows:

1♂, Coen, 10.i.1964, M. S. Moulds (In Moulds Coll.); 5♂♂, Leo Creek road, ca 500 m, McIlwraith Range, 30 km NE. of Coen, 29.vi.-4.vii.1976, M. De Baar (In De Baar Coll.). 1♂, same data, GBM & SRM; 1♀, Mt Webb Nat. Park, 50 km N. of Cooktown, 11-14.vii.1976, GBM & SRM; 1♂, rainforest on Endeavour River, 7 km N. of Hopevale, 18.vii.1976, GBM & SRM; 1♂, McIvor R. crossing, 40 km N. of Cooktown, 15-18.vii.1976, GBM & SRM (In UQIC).

The Leo Creek and Coen males are typical of subsp. *gelo* in having small subcostal spots beneath the hindwing; the specimens from immediately north of Cooktown conform to subsp. *zoilus* in that these spots are larger. These records close the gap between the known ranges of these two races from 375 km to less than 250 km.

22. *Elymnias agondas australiana* Fruhstorfer

4♂♂, 3♀♀, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, M. De Baar (In De Baar Coll.); 1♂, same data but coll. GBM & SRM (In UQIC); 2♂♂, Rocky River, Silver Plains, 2.x.1976, D. P. A. Sands (In Sands Coll.).

These specimens extend the known range of this species 110 km south from Iron Range to the vicinity of the McIlwraith Range.

23. *Pantoporia venilia moorei* (W. Macleay)

1♀, Peach Creek Crossing, 25 km NNE. of Coen, 4-5.vii.1976, GBM & SRM; 1♂, Leo Creek road, ca 500 m, McIlwraith Range, 30 km NE. of Coen, 29.vi.-4.vii.1976, GBM & SRM; 1♂, Stewart River, 5 km W. of Port Stewart, 25-27.vi.1976, GBM & SRM (In UQIC).

Iron Range is the former southern known limit for this species (C & W, 1972) and these specimens extend it 150 km further south to the Stewart River where it was uncommon in the strips of riverine rainforest there. It was common in the McIlwraith Range region.

24. *Pantoporia consimilis consimilis* (Boisduval)

1♂, 2♀♀, Kowanyama, 9-12.i.1977, D. L. Hancock (In UQIC).

This common species of the east coast has not hitherto been collected on the west coast of the Peninsula. At Kowanyama it was not uncommon in riparian vegetation near the settlement. Surprisingly, it has not been taken at Weipa which has adequate rainforest.

Family LIBYTHEIDAE

25. *Libythea geoffroy nicevillei* Olliff

2♂♂, Mt White, Coen, 13.i.1964, M. S. Moulds (In Moulds Coll.).

Few specimens of this rare butterfly are known from Australia and this is the first record for the species in the considerable interval between Cooktown and Cape York, the Peninsula localities noted by C & W (1972).

Family LYCAENIDAE

26. *Liphyra brassolis major* Rothschild

1♀, Silver Plains Homestead, 21.xi.1961, J. L. Wassell (In ANIC).

The moth butterfly has previously been noted from Cape York and Cooktown in the Peninsula (W & L, 1914) and this specimen establishes its presence in the intervening region. Its host ant, *Oecophylla smaragdina*, is ubiquitous throughout the Peninsula and the butterfly is undoubtedly more widespread than these sparse collections indicate.

27. *Virachola democles* (Miskin)

4♂♂, 4♀♀, unnamed creek 11 km S. of Batavia Downs, collected as larvae by GBM & SRM on 30.iv.1975 and reared by J. F. R. Kerr (In UQIC & Kerr Colls.); 1♂, 1♀, Stewart River, 5 km W. of Port Stewart, collected as larvae by GBM & SRM on 27.vi.1976 and reared by M. De Baar; 4♂♂, 4♀♀, near Peach Creek crossing, 25 km NNE. of Coen, collected as larvae by GBM & M. De Baar on 4.vii.1976 and reared by M. De Baar (In UQIC & De Baar Colls.); 1♂, Mt White, Coen, 12.i.1964, M. S. Moulds (In Moulds Coll.); Chillagoe, July, 1977, SRM, many infested fruit of *Strychnos lucida* but no adults obtained.

This rare species is noted from Cooktown by Le Souëf (1971) but has been taken only once on the mainland further north, at Iron Range by J. F. R. Kerr (Monteith, 1972). These new records indicate a wide distribution on the Peninsula. The previously known foodplant of *V. democles* is the vine *Strychnos colubrina*, in the fruit of which the larvae develop (Waterhouse, 1938). All the present specimens except the Mt White ♂ were bred from the fruits of *Strychnos lucida*, a small tree common along the margins of dry gallery vine forests in the Peninsula, this is the same foodplant from which *Virachola smilis dalyensis* Le Souëf & Tindale has been reared in the Northern Territory (Le Souëf & Tindale, 1970). The tree bears a heavy crop of spherical, orange fruit, 2-3 cm in diameter with a thin brittle rind enclosing several disc-shaped seeds in a translucent white pulp; these fruit have been harvested for commercial extraction of strychnine. Larvae of *V. democles* live inside the fruit and consume the entire contents before pupating inside the hollow shell. A round hole in the rind of the fruit is made for frass ejection by the larva and at maturity this hole is about 4 mm in diameter. Before pupation the larva webs the hole over with silk and the presence of this webbing is a useful indicator of fruits containing pupae. At emergence the adult butterfly tears away the window of webbing by vigorous scraping with its stout mid-tibial spurs and emerges through the frass-ejection hole. One butterfly which had emerged from a pupa in a plastic bag was seen to audibly scrape at the plastic bag with its tibial spurs for a considerable time before inflating its wings. As predicted by C & W (1972) infested fruit are attached to the tree by larval silk to prevent premature falling.

28. *Deudorix epirus agimar* Fruhstorfer

1♀, Rocky River, Silver Plains, 2.x.1976, D. P. A. Sands (In Sands Coll.).

This species has been taken rarely as far south as Iron Range previously and this specimen extends its range 110 km further south to the Rocky River, an eastern effluent stream from the McIlwraith Range.

29. *Narathura micale amytis* (Hewitson)

3♀♀, Stewart River, 5 km W. of Port Stewart, 19-20.vii.1975, GBM; 1♀, same locality, 25-27.vi.1976, GBM & SRM; 1♀, Port Stewart, 26.vi.1976, GBM; 2♂♂, 1♀, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, GBM & SRM; 1♂, Kerr Point, Weipa, 3-5.ii.1976, GBM; 1♂, Andoom, Weipa, Feb., 1975, GBM (In UQIC); 2♂♂, 2♀♀, Peach Creek crossing 25 km NNE. of Coen, 4-5.vii.1976, M. De Baar (In De Baar Coll.).

Two subspecies of *N. micale* occur on the North Queensland mainland: *N. m. amytis* from Cape York to Iron Range, and *N. m. amphis* (Waterhouse) from Cooktown southwards (C & W, 1972). The above specimens can all be referred to subsp. *amytis* fairly readily and extend the range of this race south to the Stewart River. There is a specimen available from a little north of Cooktown [1♂, Cape Flattery heath, 45 km N. of Cooktown, 13-14.vii.1976, GBM & SRM (In UQIC)] which, on distributional evidence, should be best placed with subsp. *amphis*, but which shows some features in accord with *amytis* (colour; narrower dark wing margins). In addition there is evidence that the species is present near Musgrave, in the middle of the arid corridor between Coen and Cooktown (S. Johnson, *pers. comm.*, specimen coll. July 1976 but not retained). Since *N. micale* is not rainforest restricted (see discussion of *Danis hymetus*) there may be need to review the status of these two subspecies if more intermediate specimens are taken.

30. *Ogyris zosine typhon* Waterhouse & Lyell

2♂♂, hills near Coen, 11.i.1964, M. S. Moulds (In Moulds Coll.).

The only previous locality for this species in the Peninsula north of Cooktown has been Iron Range (C & W, 1972, p. 453) and this Coen record shows that it will undoubtedly prove to be much more widespread.

31. *Ogyris amaryllis* Hewitson

4♂♂, 2♀♀, sandstone outcrops, 30 km W. of Fairview, 24-25.vii.1977, C.G. Miller (Miller Coll.).

This species has previously been known as far north as Cairns (C & W, 1972). More study is required to determine the subspecific identity of this newly discovered northern population.

32. *Hypochrysops ignita chrysonotus* Grose-Smith

1♂, sandstone outcrops, 30 km W. of Fairview, 26.vi.1975, GBM; 1♀, near airport, 27 km N. of Coen, 28.vi.1975, GBM; 1♀, Peach Creek crossing, 25 km NNE. of Coen, 5.vii.1976, M. De Baar (In UQIC).

On the Peninsula north of Cooktown this species has been recorded only from Cape York itself (W & L, 1914) and these specimens are from considerably further south in drier parts of the Peninsula.

33. *Hypochrysops polycletus rovena* Druce

1♀, small creek, 11 km S. of Batavia Downs, 30.vi.1975, GBM; 1♀, Pinnacle Creek, 25 km N. of Archer River crossing, 29.vi.1975, GBM; 1♂, Andoom Bridge, Weipa, 6.ii.1976, GBM;

1♂, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, GBM; 1♂, 1♀, Mt White summit, Coen, 6.vii.1976, GBM & SRM (In UQIC); 2♂♂, 1♀, Peach Creek crossing, 4-5.vii.1976, M De Baar (In De Baar Coll.); 1♂, Mt White summit, Coen, 27.x.1976, D.P.A. Sands (In Sands Coll.); 11♂♂, 4♀♀, Mt White summit, Coen, 8-13.i.1964, M.S. Moulds (In Moulds Coll.).

The only Peninsula records north of Cooktown for this rainforest species have been at Iron Range (C & W, 1972; Monteith, 1972). The above collections extend its range to the west coast at Weipa and south to Coen; most specimens were taken in dry depauperate vine forests which the species seems to prefer.

34. *Hypochrysops elgneri barnardi* Waterhouse

1♂, Leo Creek road, ca 500 m, McIlwraith Range, 30 km NE. of Coen, 29.vi.1976, M. De Baar (In De Baar Coll.).

This specimen was shaken from *Melaleuca* foliage in open forest on the McIlwraith Range about 100 km further south than the known southern extent of the species at Iron Range.

35. *Danis hymetus salamandri* W. Macleay

1♂, Mt White summit, Coen, 6.vii.1976, GBM & SRM; 1♂, 1♀, Stewart River, 5 km W. of Port Stewart, 19-20.vii.1975, GBM; 2♂♂, same locality, 25-27.vi.1976, GBM & SRM; 1♀, 15 km S. of Yarraden, Coen Distr., 27-28.vi.1975, GBM; 2♂♂, 5 km S. of Musgrave, 7.vii.1976, GBM & SRM; 4♂♂, 1♀, Mclvor River crossing, 40 km N. of Cooktown, 15-18.vii.1976, GBM & SRM (In UQIC); 1♀, Mt White, Coen, 10.i.1964, M. S. Moulds (In Moulds Coll.).

Two races of *D. hymetus* have been recognized in North Queensland, *D. h. salamandri* W. Macleay from Torres Strait and Cape York south to Silver Plains, and *D. h. taletum* (Waterhouse & Lyell) ranging from Mossman to Paluma. The above specimens all agree with typical *salamandri* in having cilia of hindwing with at least some checkering and male with well defined white central area of hindwing. Thus the northern race extends continuously across the dry barrier zone between Coen and Cooktown almost to Cooktown itself. This is unusual because for most species that show subspecific differentiation in North Queensland this arid, rainforest-free zone level with Princess Charlotte Bay is the geographic barrier between the races. But, in this case, neither the butterfly nor its foodplant, *Alphitonia*, are rainforest-restricted so the barrier is ineffective. Clearly some other factor is operational in separating *taletum* and *salamandri* and it may eventuate that *taletum* is a high rainfall induced form.

36. *Danis danis serapis* Miskin

1♀, Bloomfield Road, via Helenvale, 21-22.v.1975, D. L. Hancock (In UQIC); 1♂, Cooktown, 1.v.1922; 1♂, Cooktown, 13.iv.1922 (In QM).

This subspecies is recorded in C & W (1972) from Paluma north to Mossman and Daniels (1975) notes it a little further north at the Daintree River. The above records extend the known range north to the Cooktown area.

37. *Danis cyanea arinia* (Oberthur)

1♀, Claudie River, May 1961, J. F. R. Kerr; 2♂♂, 2♀♀, Claudie River, 24.iv-2.v.1966, J.F.R. Kerr (In Kerr Coll.).

This is the first locality for this species in the 600 km interval between the previous records on the Peninsula at Cooktown (W & L, 1914) and Cape York (C & W, 1972).

38. *Prosotas nora auletes* (Waterhouse & Lyell)

1♀, Iron Range, Sept., 1975, C. G. Miller (In Miller Coll.); 1♀, Captain Billy Creek, 9-13.vii.1975, J. F. R. Kerr (In Kerr Coll.).

Although this species ranges from Torres Strait to Mackay existing records for the mainland north of Cooktown are confined to Cape York (W & L, 1914); the above localities verify its occurrence elsewhere in the Peninsula.

39. *Nacaduba biocellata biocellata* (C. & R. Felder)

1 specimen, Iron Range, Sept., 1975, C. G. Miller & A. F. Atkins (netted and discarded); 1 specimen, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, M. De Baar (netted and discarded); 3♂♂, 5 km S. of Musgrave, 7.vii.1976, GBM & SRM; 1♀, sandstone outcrops, 30 km W. of Fairview, 22-24.vi.1976, GBM & SRM (In UQIC).

This widespread and normally common species has been recorded Australia-wide except for the northern parts of Queensland and the Northern Territory. These records establish it as widespread in the Peninsula but still not known from north of Iron Range.

40. *Catopyrops florinda estrella* (Waterhouse & Lyell)

1♂, 5 km S. of Musgrave, 7.vii.1976, GBM & SRM (In UQIC); 1♂, Claudie River, May 1961, J. F. R. Kerr (In Kerr Coll.).

In Queensland this species has been taken previously as far north as Cooktown (W & L, 1914) and these specimens show it to occur sparsely 375 km further north to Iron Range.

41. *Jamides aleuas coelestis* (Miskin)

2♂♂, 3♀♀, Quarantine Bay, Cooktown, 5-19.vii.1968, J. C. Le Souëf; 1♂, same locality, 8.vii.1974, J. C. Le Souëf; 1♂, Iron Range, 15.vii.1968, J. C. Le Souëf (In Le Souëf Coll.).

The main distribution of this species in Australia is from Cairns to Tully but C & W (1972, Appendix p. 453) also note a record from Iron Range. The latter record is cited in full above as well as new records for Cooktown in the intervening region.

42. *Syntarucus plinius pseudocassius* (Murray)

4♂♂, Stewart River, 5 km W. of Port Stewart, 25-27.vi.1976, GBM & SRM (In UQIC); 1♀, Cooktown, 8.vii.1964, J. C. Le Souëf; 1♀, Daintree, 28.vii.1964, J. C. Le Souëf (In Le Souëf Coll.).

Although this subspecies is also known from islands north of Australia it has not been taken prior to this from north of Cairns on the mainland (C & W, 1972); these records extend it more than 350 km further north. At the Stewart River adults were numerous flying around an understory shrub of *Plumbago zeylanica*, a known host of this butterfly; pupae and pupal exuviae were present on the sticky seed-heads of the plant.

43. *Theclinesthes scintillata* (T. P. Lucas)

1♂, Iron Range, 7.vii.1976, S. Johnson (In Johnson Coll.); 1♂, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, GBM & SRM; 1♀, Mt White summit, Coen, 6.vii.1976, GBM & SRM (In UQIC); 1♂, Wallaby Creek, Cooktown, 8.vii.1964, J. C. Le Souëf (In Le Souëf Coll.); 1♂, Iron Range, 27.v.1974, J. W. C. d'Apice (In d'Apice Coll.).

Although listed in C & W (1972) as occurring from Torres Strait to the Richmond River, there have in fact been no precise records in the literature for

the Peninsula north of Kuranda cited by W & L (1914). The above records show it occurs at least north to Iron Range.

44. *Zetona delospila* (Waterhouse)

2♀♀, sandstone outcrops, 30 km W. of Fairview, 22-24.vi.1976, GBM & SRM (In UQIC); 6♂♂, 17♀♀, sandstone outcrops, 30 km W. of Fairview, 23-25.vii.1977, C.G. Miller (In Miller Coll.). 1♂, 2♀♀, 16°28'S, 136°89'E, 46 km SSW. of Borroloola, N.T., 28.x.1975, E. D. Edwards; 1♂, 18°49'S, 123°17'E, 163 km SE. by E. of Broome, W.A., 5.viii.1976, I. F. B. Common; 1♂, 1♀, 18°55'S, 123°27'E, 145 km SE. by E. of Broome, W.A., 7.viii.1976, I. F. B. Common; 2♂♂, same locality but dated 8.viii.1976; 3♂♂, 18°53'S, 123°43'E, 186 km SE. by E. of Broome, W.A., 10.viii.1976, I. F. B. Common (In ANIC).

This monotypic, endemic, Australian genus is rare in collections and has been known from a few individuals taken between King Sound and the Ord River in the Kimberley region of Western Australia (C & W, 1972). The 13 specimens listed here have been taken since the publication of "Butterflies of Australia" and show the species to occur not only into very arid country SE of Broome but also right across arid parts of north Australia into the base of the Cape York Peninsula near Laura, no less than 1,700 km outside its previously known range. West of Fairview specimens were taken atop a *Triodia*-covered, sandstone escarpment typical of the large belt of sandstone country around Laura. There the species coexisted with the interesting *Trapezites macqueeni* (q.v.), evidence that this habitat will probably repay an intensive search for its more cryptic butterfly fauna.

45. *Zizeeria knysna karsandra* (Moore)

3♂♂, Kerr Point, Weipa, 3-5.ii.1976, GBM; 1♂, Port Stewart, 26.vi.1976, GBM; 2♂♂, 1♀, Kowanyama, 7-8.i.1977, D. L. Hancock (In UQIC); 3♂♂, 1♀, Flinders Is., 5.vi.1973, J. W. C. d'Apice (In d'Apice Coll.).

These records for both east and west coasts of the Peninsula are the first for this species north of Cairns and extend the range of the species by 600 km.

46. *Freyeria trochylus putli* (Kollar)

4♂♂, 1♀, Port Stewart, 28.iv.1961, J. L. Wassell (In ANIC); 3 unsexed, Cooktown, 8.v.1922; 2 unsexed, Cooktown, 9.v.1922 (In QM); 2♂♂, Flinders Is., 5.vi.1973, J. W. C. d'Apice; 5♂♂, 2♀♀, Portland Roads, 2.v.1969, J. W. C. d'Apice (In d'Apice Coll.).

C & W (1972) record this species as far north as Cairns on the east coast of Australia and these new localities take it a further 500 km north into the Peninsula.

47. *Candalides absimilis* (Felder)

1♂, Mt White summit, Coen, 6.vii.1976, GBM & SRM (In UQIC); 5♂♂, same locality, 27.x.1976, D. P. A. Sands (In Sands Coll.).

The only records north of Cooktown (Manskie, 1972) for this species have been for Iron Range (C & W, 1972, appendix p. 453) and these hilltopping males from Coen establish its presence in the intervening region.

48. *Philiris diana papuana* Wind & Clench

1♂, Bamaga, 28.iii.1976, C. R. & D. J. Franzen (In Franzen Coll.); 1♀, Dividing Range, 15 km W. of Captain Billy Creek, 5-12.ii.1976, GBM (In UQIC).

This subspecies of *P. diana* has been taken previously in Australia only at Iron Range (C & W, 1972) and these two new localities show that it is widespread north to the tip of the Peninsula.

49. *Philiris kamerungae* Waterhouse

subsp. *lucina* Waterhouse & Lyell: 1♀, Peach Creek crossing, 25 km NNE. of Coen, 4-5.vii.1976, M. Be Baar (In De Baar Coll.).

subsp. *kamerungae* Waterhouse: 1♀, McIvor River, 40 km N. of Cooktown, 8.vii.1964, J. C. Le Souëf (In Le Souëf Coll.).

These records extend the range of *lucina* about 100 km south from Iron Range, and that of *kamerungae* 200 km north from Cairns, these being the previous distributional limits given for the subspecies by C & W (1972).

50. *Philiris fulgens kurandae* Waterhouse

1♂, Cape York, 4.xi.1927, E. J. Dumigan; 1♂, 1♀, Dividing Range, 15 km W. of Captain Billy Creek, 5-12.ii.1976, GBM (In UQIC); 1♂, Bamaga, March, 1976, C. R. & D. J. Franzen (In Franzen Coll.); 1♂, Gunshot Creek, 12-15.vii.1975, J. F. R. Kerr; 1♀, Dividing Range, 15 km W. of Captain Billy Creek, 9-13.vii.1975, J. F. R. Kerr (In Kerr Coll.).

This species has not been recorded north of Iron Range (C & W, 1972) on the mainland of Australia but these 6 specimens from 4 different localities show it is widespread right to the tip of the Peninsula.

Species list for Shelburne Bay region (Table 1)

On an aerial reconnaissance of the Peninsula in 1948, L. J. Brass, leader of the Archbold Expedition, believed he saw a large tract of unreported and inaccessible rainforest near Shelburne Bay (Brass, 1953), but 23 years elapsed before its presence was confirmed by Pedley and Isbell (1971). Much of the region is now part of a pastoral development called "Capelands" and road construction has allowed detailed vegetational mapping by Lavarack and Stanton (1977) who estimate the area of rainforest as 535 km². The northern part of the region has been proposed as a national park (Stanton, 1976).

The area is shown in the inset to Fig. 1. Rainforest is best developed along the crest of the Great Dividing Range (here only *ca* 100 m high) inland from Captain Billy Creek; riverine fringes and small patches also occur on the narrow coastal plain. The intrinsic interest of this rainforest system is that it lies virtually midway between the well-collected rainforests at Lockerbie and Iron Range which have rather contrasting butterfly faunas. The first butterflies collected there were 41 species taken in August 1973 by J. Winter of the Qld National Parks & Wildlife Service; since then 3 visits by our A.B.R.S. parties have increased the list and extended coverage to heath and woodlands west of the Divide. As there have been published records for only one butterfly species [*Appias ada caria* from the Ducie River (W & L, 1914)] from the Peninsula between Iron Range and Bamaga, we list the 98 spp. taken on these trips in Table 1. The six sites sampled are shown on the inset map and on the table as A, B, C, D, E, F. Details of the sites, collectors and dates are as follows:

- Site A: Cockatoo Creek crossing at site of former McDonnell Telegraph Station. Eucalyptus woodland with small rainforest patch. (GBM, Sept., 1974; GBM & SRM, July, 1975)
 Site B: Gunshot Creek crossing. Heath and woodland with some rainforest trees along creek. (J. F. R. Kerr, D. L. Hancock, GBM & SRM, July, 1975)

TABLE 1. List of butterfly species collected at six sites in the Shelburne Bay region of Cape York Peninsula. See text and map for details of sites.

Species	Sites	Months	Species	Sites	Months
HESPERIIDAE			NYMHALIDAE —cont'd		
<i>Badamia exclamationis</i>	DE	2, 8	<i>Hypocysta irius</i>	BC EF	2,7,8,9
<i>Tagiades j. janetta</i>	B DEF	2,7,8	<i>Hypocysta a. adiante</i>	BC EF	7,8,9
<i>Trapezites heteromacula</i>	BC F	7	<i>Xois a. arctous</i>	ABCD F	2,7
<i>Trapezites iacchus</i>	B	7	<i>Polyura p. sempronius</i>	E	7
<i>Toxidia thyrrhus</i>	E	2,7	<i>Lexias aeropa</i>	EF	7
<i>Toxidia i. inornata</i>	EF	2,7	<i>Neptis p. staudingereana</i>	E	7
<i>Neohesperilla xiphophora</i>	D	2	<i>Pantoporia v. moorei</i>	ABC EF	2,7,8
<i>Notocrypta w. proserpina</i>	EF	7	<i>Pantoporia c. consimilis</i>	ABC EF	2,7,8
<i>Taractrocera ina</i>	D	2	<i>Doleschallia b. australis</i>	B EF	2,7,8
<i>Ocybadistes w. sonia</i>	BC	7	<i>Hypolimnias b. nerina</i>	BC EF	2,7,8
<i>Ocybadistes a. heterobathra</i>	E	7	<i>Hypolimnias a. lamina</i>	BC EF	2,7,8,9
<i>Suniana l. neocles</i>	D	2	<i>Yoma s. parva</i>	E	7
<i>Suniana s. reactivita</i>	AB EF	7,8	<i>Precis h. zelima</i>	BC F	7, 9
<i>Arrhenes d. iris</i>	E	7	<i>Precis v. calybe</i>	BC F	7, 9
<i>Telicota c. argeus</i>	C EF	2,7	<i>Precis o. albicincta</i>	CDEF	2,7,8,9
<i>Telicota a. krefftii</i>	B EF	2,7,8	<i>Cethosia c. chrysippe</i>	E	2,7
<i>Telicota o. ohara</i>	E	2, 8	<i>Cupha p. prosopoe</i>	B EF	2,7,8
<i>Telicota m. mesoptis</i>	EF	2,7	LYCAENIDAE		
<i>Cepheres a. sperthias</i>	E	7	<i>Bindahara p. yurgama</i>	E	2,7
<i>Sabera c. albifascia</i>	B EF	2,7	<i>Rapala v. simsoni</i>	D	2
<i>Sabera d. autoleon</i>	EF	7	<i>Deudorix e. agimar</i>	E	7
<i>Pelopidas a. dingo</i>	B E	2,7	<i>Hypolycaena p. phorbas</i>	BC EF	2,7,8,9
<i>Pelopidas l. lyelli</i>	ABCD	2,7, 9	<i>Hypolycaena d. turneri</i>	E	7
PAPILIONIDAE			<i>Jalmenus eichhorni</i>	CDEF	2,7,8
<i>Graphium s. choredon</i>	EF	2,7,8	<i>Narathura w. wildei</i>	B EF	7
<i>Graphium m. macfarlanei</i>	E	2,7	<i>Narathura a. eupolis</i>	BC E	2,7, 9
<i>Graphium a. ligatum</i>	E	2,7,8	<i>Narathura m. amytiis</i>	ABC EF	2,7,8
<i>Papilio a. aegaeus</i>	B EF	2,7,8	<i>Hypochrysops t. medocus</i>	E	7
<i>Papilio u. joesa</i>	ABCDEF	2,7,8,9	<i>Hypochrysops a. apelles</i>	B EF	2,7,8
<i>Cressida c. cressida</i>	D	2	<i>Hypochrysops a. phoebus</i>	F	8
<i>Pachliopta p. queenslandicus</i>	ABCDEF	2,7,8,9	<i>Hypochrysops n. narcissus</i>	E	2,7
PIERIDAE			<i>Hypochrysops digglesii</i>	F	7
<i>Eurema c. virgo</i>	EF	2, 8	<i>Pseudodipsas eone</i>	E	2,7,8
<i>Eurema h. phoebus</i>	BCDEF	2,7,8	<i>Danis h. salamandri</i>	ABC EF	2,7, 9
<i>Eurema l. lineata</i>	BC EF	2, 9	<i>Prosotas d. dubiosa</i>	EF	7
<i>Eurema herla</i>	E	2	<i>Prosotas n. auletes</i>	F	7
<i>Delias a. argenthona</i>	B	7	<i>Nacaduba b. berenice</i>	F	7
<i>Delias m. waterhousei</i>	EF	7,8	<i>Nacaduba k. parma</i>	ABC EF	7
<i>Delias a. inferna</i>	E	2	<i>Jamides phaseli</i>	B E	2,7
<i>Cepora p. scyllara</i>	E	7	<i>Anthene s. affinis</i>	EF	7
<i>Appias p. ega</i>	F	7,8	<i>Anthene l. godeffroyi</i>	F	7
NYMPHALIDAE			<i>Theclinessthes o. onycha</i>	C F	7,8
<i>Danaus c. petilia</i>	CDE	2,7	<i>Catochrysops p. platissa</i>	D	2
<i>Danaus a. affinis</i>	B EF	2,7,8	<i>Zizina o. labdalon</i>	F	8
<i>Danaus h. hamatus</i>	E	8	<i>Candalides h. helenita</i>	AB EF	2,7,8
<i>Euploea c. corinna</i>	F	8	<i>Candalides e. erinus</i>	ABCDEF	2,7,8,9
<i>Tellervo z. gelo</i>	EF	2,7,8	<i>Candalides sp.</i>	B EF	7
<i>Melanitis l. bankia</i>	BC EF	2,7, 9	<i>Philiris d. papuana</i>	E	2
<i>Elymnias a. australiana</i>	EF	2,7,8	<i>Philiris f. kurandae</i>	B E	2,7
<i>Mycalesis t. terminus</i>	BC EF	2,7,8	<i>Philiris i. evinculis</i>	AB	7
<i>Mycalesis p. perseus</i>	ABCDEF	2,7,8,9	<i>Praetaxila s. punctaria</i>	B E	2,7,8

- Site C: Dulhenty River crossing. Eucalyptus and melaleuca woodland with some denser vegetation along creek. (GBM, Sept. 1974; GBM & SRM, July, 1975)
- Site D: "Capelands" Headquarters. Continuous heath. (GBM, Feb, 1976)
- Site E: Dividing Range at Y-Junction. Extensive rainforest with some adjacent sclerophyll vegetation. (J. Winter, Aug, 1973; J. F. R. Kerr, D. L. Hancock, GBM & SRM, July, 1975; GBM, Feb, 1976)
- Site F: Coast plain at Captain Billy Ck road crossing. Mixed rainforest and sclerophyll (melaleuca) vegetation. (Winter, Aug, 1973; Kerr, Hancock, GBM & SRM, July, 1975)

The list shows that the region has a well-developed rainforest fauna having most affinities with that of Lockerbie to the north. Most of the rainforest, Peninsula-restricted species that were formerly known from both Lockerbie and Iron Range also occur at Shelburne Bay, e.g. *Eurema candida*, *Delias aruna*, *Pantoporia venilia*, *Elymnias agondas*, *Deudorix epirus* and *Hypochrysops theon*. However, of the six rainforest species previously known only from Iron Range-McIlwraith Range and not from Lockerbie (*Toxidia inornata*, *Mimene atropatene*, *Rachelia extrusa*, *Hypocysta angustata*, *Apaturina erminea* and *Jamides cytus*), only one, *T. inornata*, was encountered at Shelburne Bay. Notable absentees from the list are species of the normally ubiquitous genera *Elodina* and *Euploea* (except one record of *Euploea core*) and the apparent absence of *Ornithoptera priamus* has been commented on earlier (p. 27). The only butterfly to date known in Australia only from the region is *Lexias aeropa*.

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